

ABSTRACT

This invention provides methods of inducing cell death with *Flavivirus* or *Pestivirus* capsid protein, such as West Nile virus (WNV) capsid protein, and functional fragments thereof. The invention also provides methods of treating patients suffering from diseases characterized by hyperproliferating cells by administering pharmaceutical compositions comprising WNV or other virus including *Flavivirus* or *Pestivirus* capsid or other protein or a nucleic acid molecule encoding the same. Methods of identifying compounds which have anti-viral and/or anti-WNV and/or anti-*Flavivirus* and/or anti-*Pestivirus* capsid or other protein activity are disclosed. The invention also provides vaccine compositions comprising capsid or other proteins, or fragments thereof, or nucleic acids encoding same, from WNV or other virus including *Flavivirus* or *Pestivirus* and a pharmaceutically acceptable carrier. The invention also provides diagnostic methods and kits for identifying individuals exposed to WNV or other viruses including *Flavivirus* or *Pestivirus*.